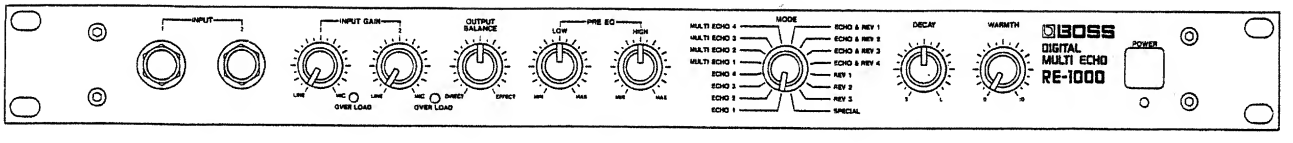
BOSS

DIGITAL MULTI ECHO RE-1000

Owner's Manual



ATTENTION: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS

WARNING — When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. Avoid using the product where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

For the USA

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.
Do not modify the plug provided with the product — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

SAVE THESE INSTRUCTIONS

For the U.K.

WARNING: THIS APPARATUS MUST BE EARTHED

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

The product which is equipped with a THREE WIRE GROUNDING TYPE AC PLUG must be grounded.

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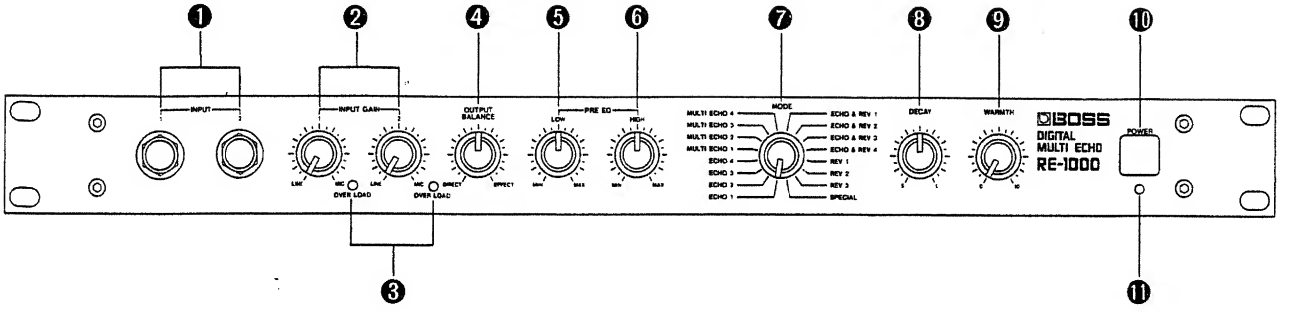
■ PANEL DESCRIPTION

《Front Panel》



❶ Input Jacks 1, 2
Jacks that accept input from a microphone or musical instrument.

❷ Input Gain Knobs 1, 2
Provide adjustment of the input gain for the respective Input Jacks. The further they are moved clockwise, the greater the input level becomes. Preferably, the adjustment should be made so you get the strongest possible input without causing the Overload indicators to light up.

❸ Overload Indicators
Light up when the level of the input signal is excessive.

❹ Output Balance Knob
This knob is used to adjust the volume balance of the direct sound versus the effected sound. When turned fully counterclockwise, you obtain solely the direct sound. When turned fully clockwise, you obtain the effected sound alone. At the center position (⏻) the direct and effected signals will be in equal proportions.

❺ Pre-Equalizer Low Knob
Adjusts the quality of the lower frequency portions of the effected sound. At the center position (⏻), flat response is obtained. When moved clockwise, the lower range portions are emphasized. When moved counterclockwise, they are dampened.

❻ Pre-Equalizer High Knob
Adjusts the quality of the higher frequency portions of the effected sound. At the center position (⏻), flat response is obtained. When moved clockwise, the upper range portions are emphasized. When moved counterclockwise, they are dampened.

❼ Mode Switch
Provides for selection of the type of effected sound (Mode). For explanation of the settings pertaining to each Mode, refer to the "Mode Chart," page 6.

* **Note that a certain amount of noise may be produced when a change in the Mode is made. This does not indicate a malfunction.**

❽ Decay Knob
Used to determine the number of repetitions in the effected sound and the reverberation time. Its function varies depending on the selection made using the Mode Switch ❼. For further details, refer to the "Mode Chart," page 6.

* **Although a certain amount of noise may be produced when this knob is turned, it does not indicate a malfunction.**

❾ Warmth Knob
Used to add "pulsation" to the effected sound. The effect becomes deeper the more the knob is moved clockwise. With tape-type echoes, a distinctive effect is obtained as a result of the fluctuation caused by minute changes in the tape travel. The Warmth knob allows you to produce such fluctuations (or pulsations) electronically, and as a result you obtain an echo similar to that provided by the tape method.

❿ Power Switch
Turns power on and off.

* **Whenever you turn the power switch on or off, make sure that you have the power on your amplifier(s) turned down to "0".**
* **Due to this unit's circuitry protection feature, it requires a few moments after power is turned on before it is ready for operation.**

⓫ Power Indicator
Lights up when the power is turned on.

Thank you, and congratulations on your choice of the BOSS RE-1000.
The RE-1000 is equipped with newly developed DSP (Digital Signal Processing) chips, making it a full-featured unit that provides high-quality sound. It is an easy-to-use, yet powerful Digital Multi-Echo unit that also can boast of a very favorable cost/performance ratio.
To make sure you get the most out of the RE-1000 and enjoy continuing satisfaction as a result of operating it under the best of conditions, please thoroughly read these instructions before operating the unit.

■ FEATURES

- 16-bit digital processing assures high-quality sound.
- Provides an abundant selection from 16 types of effects, including simple echoes or multi-echoes, as well as those combined with reverb.
- An Input Gain knob widens your possibilities – microphones, musical instruments, and many other devices can be used.
- For input, an onboard two-channel mixer allows you to have two devices, such as a microphone and musical instrument, connected simultaneously.
- A Warmth knob facilitates creation of echo effects that pulsate, and have more warmth.
- A truly expansive echo is provided from the Stereo Out jacks.
- Full control over the tone of the effected sound is furnished by means of the Pre-Equalizer.

■ IMPORTANT NOTES

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

Power Supply

- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.

Placement

- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.

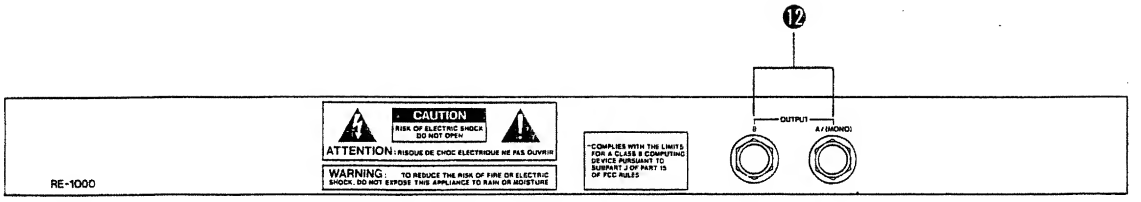
Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

Additional Precautions

- Protect the unit from strong impact.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.

《Rear Panel》



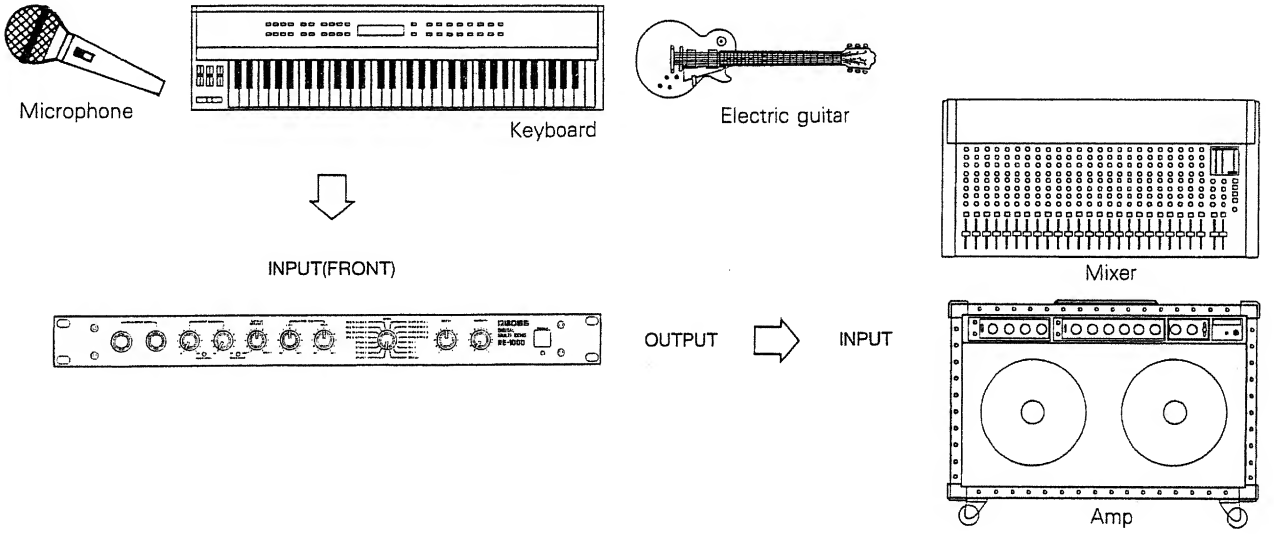
⑫ Output Jacks A (MONO), B

These jacks provide output of the effected and the direct sound signals.

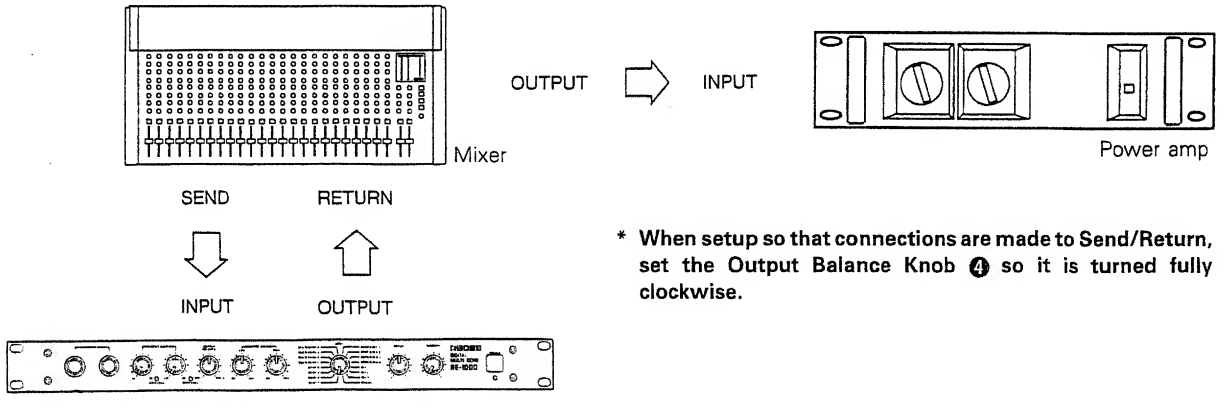
*** Connection should be made to the A (MONO) jack if monaural output is desired.**

■ MAKING CONNECTIONS

□ Example Setup 1: Using microphone, keyboard, electric guitar, etc.



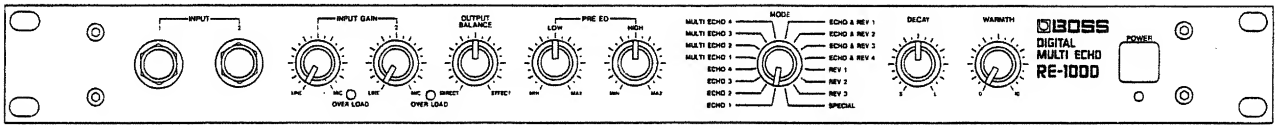
□ Example Setup 2: Connecting with a mixer's send/returns



*** When setup so that connections are made to Send/Return, set the Output Balance Knob ❹ so it is turned fully clockwise.**

■ OPERATION

① Once all connections have been made, set all panel knobs so they are in the positions shown in the illustration below:



② Adjust the input level for each channel using Input Gain Knobs 1 & 2 ❷. Adjust them so you don't cause the Overload Indicators ❸ to light up.

③ Select the type of effect desired using the Mode Switch ❼. Refer to the "Mode Chart," page 6, for explanation of the settings pertaining to each Mode.

* **Although a certain amount of noise may be produced when a change in the Mode is made, there is no need for concern.**

④ Use the Decay Knob ❽ to set the number of repetitions in the effected sound and the reverberation time. The function obtained varies depending on the Mode Switch ❼ setting. For further details, refer to the "Mode Chart," page 6.

⑤ Use the Output Balance Knob ❹ to adjust the volume balance of the Direct sound versus the Effected sound.

⑥ Adjust the quality of the effected sound using the Pre-Equalizer Knobs ❺ ❻

⑦ Use the Warmth Knob ❾ to adjust the "pulsation" of the effected sound.

■ MODE CHART

MODE	EXPLANATION	DECAY KNOB
ECHO 1	Provides a standard echo effect.	Sets the number of repetitions in the echo.
ECHO 2		
ECHO 3		
ECHO 4		
MULTI ECHO 1	Provides a deeper, spacious echo effect.	Sets the number of repetitions in the echo.
MULTI ECHO 2		
MULTI ECHO 3		
MULTI ECHO 4		
ECHO & REV 1	Reverberation is added to a single echo to provide an effect with much more breadth.	Sets the number of repetitions in the echo, and the reverberation time.
ECHO & REV 2		
ECHO & REV 3		
ECHO & REV 4		
REV 1 (Room type)	Provides a natural reverb effect.	Sets the reverberation time.
REV 2 (Hall type)		
REV 3 (Plate type)		
SPECIAL	Provides an echo effect timed at a specialized interval.	Adjusts the pattern of the echo.

■ SPECIFICATIONS

- **Input Level/Input Impedance:**
  +4dBm/150kΩ to −52dBm/2kΩ (Nominal)
  +19dBm (Max)

- **Output Level/Output Impedance**
  −20dBm/1.5kΩ

- **Output Load Impedance**
  More than 10kΩ

- **Frequency Response**
  Direct: 20Hz to 20kHz (+1, −3dB)
  Effect: 30Hz to 10kHz (+1, −3dB)

- **Sampling Frequency**
  31.25kHz

- **Sampling System**
  16-bit Linear

- **Residual Noise**
  Less than −96dBm (IHF-A)

- **Control**
  Input Gain 1, 2
  Output Balance
  Pre Equalizer-High
  Pre Equalizer-Low
  Decay Time
  Warmth

- **Switch**
  Mode (16 Mode)
  Power (On/Off)

- **Indicator**
  Power
  Overload 1, 2

- **Jacks**
  Input 1, 2
  Output A (MONO), B

- **Power**
  AC120, 220, 240V

- **Power Consumption**
  6.5W

- **Dimensions**
  482(W)×44(H)×208(D)mm/19″×1-13/16″×8-1/4″

- **Weight:**
  2.5kg
  5lb 9oz

* Specifications are subject to change without notice.

For West Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

DIGITAL MULTI ECHO RE-1000

(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der

Amtsbl. Vfg 1046/1984

(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Roland Corporation Osaka/Japan

Name des Herstellers/Importeurs

For the USA

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a rasidential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measure.

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non Roland devices, contact the manufacturer or dealer for assistance.

If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until the interference stops.
- Move the equipment to one side or the other of the TV or radio.
- Move the equipment farther away from the TV or radio.
- Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
- Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission.

"How to Identify and Resolve Radio — TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

For Canada

CLASS B **NOTICE**

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B **AVIS**

Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Réglement des signaux parasites par le ministère canadien des Communications.

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